

REMARKS/ARGUMENTS

The present invention teaches a method for improving the stability of the free layer through the introduction of a second pair of stabilizing layers, located either above or below the standard stabilizing layer and magnetizing it in a direction that is antiparallel to that of the first bias layer, thereby magnetostatically canceling out most of the external field of the first bias layer.

Reconsideration is requested of all rejections based on 35 U.S.C. 112:

In an attempt to fully distinguish the present invention from Gill, in our preceding paper we amended the key clause (that appears in claims 1, 9, 17, and 25) to read:

“providing a pair of opposing permanent magnet layers separated by a first gap and magnetized in a first direction, that abut, and do not overlap in any way, including a direct connection to another magnetic material, said free layer, thereby providing longitudinal bias thereto”

Examiner responded to this by rejecting all claims under 35 USC 112. Examiner's stated reason for this is as follows: “Applicant's Figs. 4 and 5 shows (sic) a “detailed implementation of the invention,” wherein a pair of opposing permanent magnet layers 11 separated by a first gap and magnetized in a first direction, that abut free layer and **do overlap** shield layer 41, which is an another (sic) magnetic material. It clearly shows that Applicant does not have passion (sic) of the claimed feature of “do not overlap in any way, including a direct connection to another material.” “

It would appear that the additional wording added to this clause has caused examiner to lose track of its meaning. Stripped of the various qualifiers that make up much of this clause, it reads as follows:

“.... a pair of opposing permanent magnet layers that abut, and do not overlap...., including a direct connection to another magnetic material, said free layer,”

In basic grammatical terms, it should now be evident that the subject clause is “a pair of opposing permanent magnets”, the predicate clause is “that abut and do not overlap”, and the object clause is “said free layer”, while “including a direct connection to another magnetic material” is an adverbial clause that further qualifies the predicate clause.

Hopefully, it is now clear to examiner that the object that is abutted, but not overlapped, is the free layer, and only the free layer, and not “any other magnetic material”.

By way of even further clarification, we have amended the adverbial clause mentioned above to read “...including through [a] direct connection to another magnetic material...” (in claims 1, 9, 17, and 25)

Reconsideration is requested of all rejections based on 35 U.S.C. 102 and 103:

In responding to the first of the two arguments that we presented in our preceding paper, examiner has continued to reject any arguments that rely on Fig. 5 of Gill on the grounds that he has recited only Gill’s Fig. 3 in his rejection, said Fig. 5 being a different embodiment and therefore not relevant to the rejection.

We apologize for our initial insistence that Fig. 5 is not a different embodiment, since examiner has provided irrefutable evidence that it is. That having been said, we draw examiner’s attention to 37 CFR 1.141 where it states that “two or more

independent and distinct inventions may not be claimed in one application". If, as examiner states, Gill's Fig. 5 "has nothing to do with the rejection" and since his rejection is based on Gill's Fig. 3, it follows that, from examiner's standpoint, there can be no commonality between what these two figures represent. However, this cannot be the case since only a single invention is being examined!

In any case, the only difference between Fig. 3 and Fig. 5 is that layers 134 and 142 of Fig. 3 are designated as 1st and 2nd magnetic layers respectively while in Fig. 5 layers 180 and 184 occupy the positions held by layers 134 and 142 in Fig. 3 and are both designated as CoFe. Since the examiner's rejection is not based on the composition of these two layers and since longitudinal bias layer 88 overlaps free layer 62 (by virtue of its being directly connected to ferromagnetic seed layer 130) in both figures, Fig. 5 has EVERYTHING to do with the rejection. If examiner has documentary evidence that arguments that apply equally well to two figures are not valid if examiner has named one of these figures and applicant the other, we respectfully request that examiner provide such evidence.

In responding to the second of the two arguments that we presented in our preceding paper, examiner has once again been non-responsive to our arguments, choosing, instead, to simply repeat his earlier argument that opposing layers 142 are a pair of bias magnets that do not overlap the free layer. This is incorrect. As best seen in Gill's Fig. 4, layers 134 and 142 are antiferromagnetically coupled and are thus magnetically antiparallel to one another. This implies that virtually no flux escapes to the left or right of layer 142. Instead, portion 92 of free layer 68 is magnetically pinned in the OPPOSITE direction to that of layer 142.

Even if examiner is somehow able to show that sufficient flux escapes from layer 142 (in the right direction!) to allow him to refer to it as a second bias layer, that still does not overcome the fact that layer 142 overlaps the free layer, thereby teaching directly away from the present invention.

Appl. No. 10/613,598
Amdt. dated 12/29/2006
Reply to Office action of 12/05/2006

In light of the foregoing arguments, applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

GEO. O. SAILE & ASSOCIATES
28 Davis Avenue
Poughkeepsie
NY 12603

By

A handwritten signature in black ink, appearing to be 'SBA', written over a horizontal line.

Stephen B. Ackerman
Reg. No. 37761